BTEC

BTEC Assignment Brief

Qualification	Pearson BTEC Level 3 National Foundation Diploma in Information Technology
Unit number and title	**Unit 4: Programming**
Learning aim(s) (For NQF only)	**B:** Design a software solution to meet client requirements **C:** Develop a software solution to meet client requirements
Assignment title	Programming Development
Assessor	
Issue date	
Hand in deadline	
Vocational Scenario or Context	You are a junior employee at a small software development company. Your company recently visited a local college and delivered a guest lecture. The college were pleased with the outcome of the visit and have asked your company to judge an upcoming tournament. The college will be running a tournament for students to compete in a series of events for prizes. • Participants may enter the tournament as individuals or as part of a team • It is expected that will be 4 teams each with 5 members and there will be 20 spaces for individual competitors • Each team or individual will complete 5 events • Each event will be defined as a team or individual event • The events will vary in type, from sporting to academic challenges • Individuals and teams will be awarded points according to their rank within each event • The points awarded for each event are as yet undecided and the college are willing to hear any suggestions you may have • Also the college would like to include the possibility of entering for one event only You have been asked to design and develop a computer program to manage the scoring system for the tournament.
Task 1	**Design and develop** Produce a design for the tournament scoring system application including clear and effective diagrams, illustrations and algorithm designs. You will produce a design report in which you will: • discuss software development life cycle stages, considering what areas of design and development

	should happen in which stages. You will produce an assessment of the scoring systems requirements and a design specification before any code is developed • document the design of the system you will create, including descriptions the tasks your program needs to fulfil, algorithms your program will use, data structures and data storage needed by the system • you should ensure that all of your diagrams and illustrations are relevant and accurately describe the programs you intend to create • analyse the design options for the system, considering the features of the software you will create • you should consider the advantages and drawbacks of using certain programming languages, identify any pre-defined code and assets available for use and how it could be integrated into the new system • review your designs with others to obtain feedback and identify areas for improvement to evaluate and justify your final design • using appropriate methods, compile a test plan with test data for the system to be tested against once development is complete. Following the design you will develop the tournament scoring system application. You will implement the program to provide the functionality required by the college. You will produce a development report in which you will: • demonstrate your use of a development environment and the chosen programming language, including the use of any pre-defined code and library routines within your program identifying how they improve program efficiency • run your test plans from the design stage, ensuring that the program is thoroughly tested and that any errors found are documented with reasons why the error occurred and suggestions for repair • repair errors found during the testing process with clear documentation for how repairs were made and results of retesting • document errors that cannot be repaired, giving reasons why this is the case and suggest repairs for future reference • review your program following feedback from users to identify areas for improvement and optimisation and prioritise which improvements to make with regard the time frame available to you. • evaluate your final product covering how the decisions from all stages of the design and development process have ensured that the computer program produced, in comparison to other

	possible solutions, resulted in solutions that fully meet the college's requirements and the impact these processes had on the effectiveness of the development of the final outcomes. You also need to show how you have taken individual responsibility and effectively managed yourself while completing this assignment. For example, you need to show how you have: • planned and managed your time and met targets. • reviewed and responded to outcomes including the use of feedback from others • behaved appropriately while completing the assignment – including professionalism, etiquette, supportive of others, timely and appropriate leadership, accountability and individual responsibility • evaluated outcomes to help inform high-quality justified recommendations and decisions • used appropriate methods of communication effectively
Checklist of evidence required	You should include: • all of your design documents such as, diagrams, pseudo-code and illustrations. • records of review discussions (what was discussed and what decisions were made?) • test plans (what will be tested and how?) • program code • program files (your working program) • test logs (results of your test) • error reports (what went wrong and how it was fixed) • optimisation logs (what was improved) • your evaluation of the development and the completed program • a document which demonstrates that you have shown individual responsibility and effective self-management

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
4/BC.D3	Demonstrate individual responsibility, creativity and effective self-management in the design, development and review of the computer program
4/BC.D2	Evaluate the final design and optimised software application against client requirements
4/B.M2	Justify design decisions, showing how the design will result in an effective solution
4/C.M3	Optimise the computer program to meet client requirements
4/B.P4	Produce a design for a computer program to meet client requirements
4/B.P5	Review the design with others to identify and inform improvements to

	the proposed solution
4/C.P6	Produce a computer program that meets client requirements
4/C.P7	Review the extent to which the final computer program meets client requirements
Sources of information to support you with this Assignment	Programming tutorials: http://www.tutorialspoint.com/sdlc/ Stroustrup B. "Programming: Principles and Practice Using C++", Addison-Wesley Professional, 2014, 9780133796742
Other assessment materials attached to this Assignment Brief	